

# USER MANUAL

## uPumper P20H

V1.0

2023/05/18

**SHOWVEN<sup>®</sup>**



**SHOWVEN Technologies Co., Ltd**

Thanks for choosing SHOWVEN Flame system, we wish it will bring you lots of exciting moments. Please read the following user's manual and related product installation guide carefully before operating this system.

## ▲ Safety Instructions

### 1. Safety icons explanation

Safety instructions warn of hazards when handling equipment and provide information on how to avoid those hazards. They are classified according to the severity of the hazard and are divided into the following groups. Please do follow all safety instructions in this document!

**DANGER:** Indicates a hazardous situation that, if not avoided, will result in death or serious injury. (This signal word is limited to the most extreme situations)

**WARNING:** Indicates a hazardous situation that, if not avoided, could result in serious injury

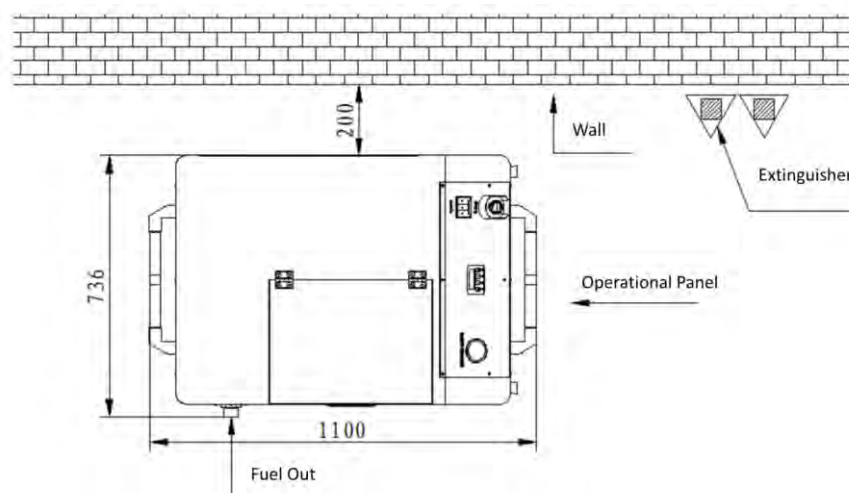
**CAUTION:** Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**NOTICE:** Provide additional or supplementary information.

### 2. General Safety Instructions

- Unauthorized repair are prohibited, it may cause serious incident.
- Make sure power supply is consistent with the rated voltage of the equipment, and the socket must be well grounded. Unplug and turn off the machine when not use.
- After turning on the device, no person allows to stay in the danger area. Ensure all persons that are part of the show be informed about the safety distance, risks and functions of the device.
- Always have a CO<sub>2</sub> fire extinguisher and an extinguishing blanket in case of needed.
- If there be any doubt as to the safety operation of the device in any circumstances, the device should be taken out of service immediately. Be sure the device is in good operating condition before use. If fail to fire correctly, immediately shut down and check it accordingly. Any questions please always contact SHOWVEN (info@showven.cn) for help.
- Be sure to use high quality flame fluid ISOPAR L/M, otherwise, it is easily leads to failure or danger. Be careful when refill the flame fluid tank. Please keep flame fluid away from heat source, sparks, fire or other possibility of ignition. Do not smoke!
- The operator responsible for the control of flame system must always have a clear view of the device, so that he/she can stop the show immediately when there is danger. The main AC power switch should be near operator. So that operator can turn off the power of all devices in case of abnormal.
- The device shall not be altered and applied to other use purpose.

### 3. Precautions for Installation



The device must be installed in a well-ventilated room. The distance between the device and the wall is not less than 200mm. The device must be kept away from heat sources, fire sources and other objects that may cause fire. It is strictly forbidden to install in the open air or in a closed space. A fire extinguishing device must be arranged next to the equipment. The installation of equipment is shown as above.

**Warning:**

This device is not waterproof, forbidden to use it in rainy and snowy environments.

#### **4. Disclaimers:**

SHOWVEN technologies Co., Ltd excludes liability for unsafe situations, accidents and damages resulting from:

1. Ignoring warnings or regulations as shown on product manual or this manual.
2. Use for other applications or circumstances other than those indicated herein.
3. Changes to the device, including use of non-original spare parts, lack of maintenance etc.
4. Dismantling device without authorization from SHOWVEN.
5. Use this machine by unqualified or untrained personnel.
6. Improper use of machine.

**Warning:**

A dry powder fire extinguisher, a carbon dioxide fire extinguisher and a fire blanket must be equipped next to the equipment (uPumper P20 pump station, uFlamer X1800). Someone must be on duty during operation. In case of fire accident, dry powder fire extinguisher can be used when the fire is large, and a carbon dioxide fire extinguisher can be used when the fire is small.

**Warning:**

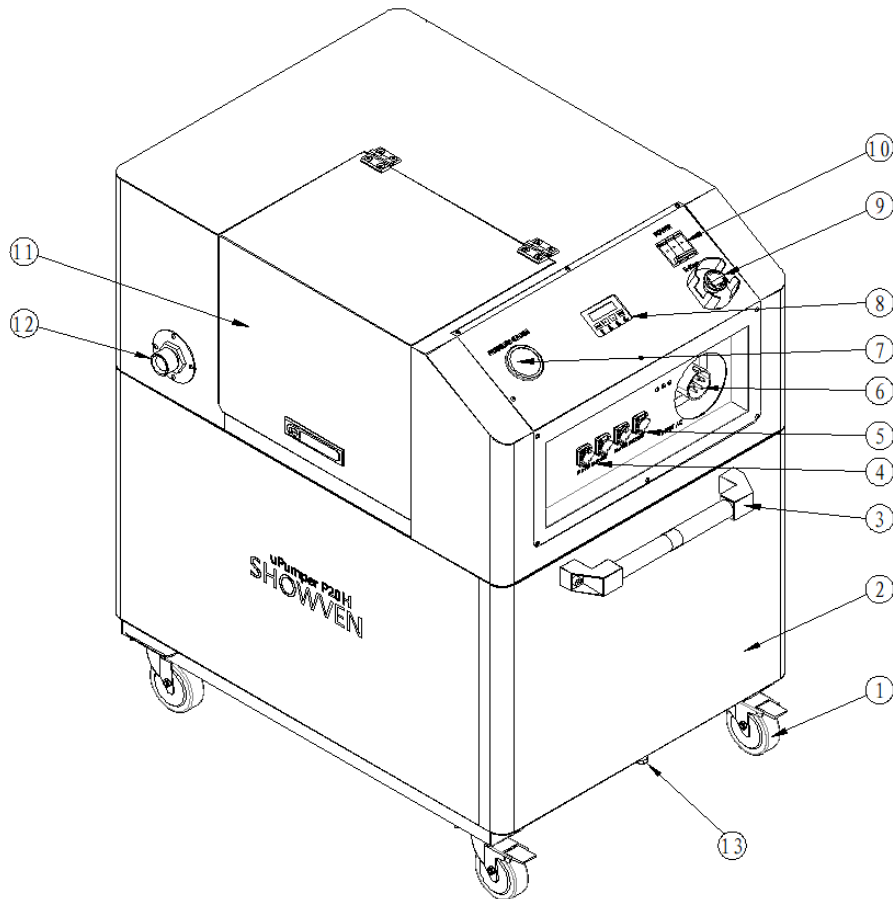
Fuel requirements for SHOWVEN flame system, for safety and long service life of flame system, please strictly follow below requirements. SHOWVEN technologies Co., Ltd excludes liability for unsafe situations, accidents and damages if not following below requirements.

1. Water content in fuel should less than 0.5%.
2. For safety, please use fuel with flash point between 60-80°C, ISOPAR L or M are recommended.
3. Ethanol based fuels are forbidden to use on uPumper P20.

#### **▲ Technical Specifications**

- \\ **Model:** uPumper P20H
- \\ **Dimension:** 1100×736×1095mm
- \\ **Weight:** 285kg
- \\ **Housing:** 304 stainless steel
- \\ **Input:** AC380V
- \\ **Work Power:** 10KW
- \\ **Tank Capacity:** 250L
- \\ **Pump Output:** 110L/min
- \\ **Control:** DMX, Auto pressurize
- \\ **Support X20 heads:** 2-3 heads
- \\ **Installation suggestions:** The horizontal distance between the flame head and P20H is recommended to be within 200m, and the vertical height is recommended to be within 30 meters (can be customized according to the actual situation)

## ▲ Structure

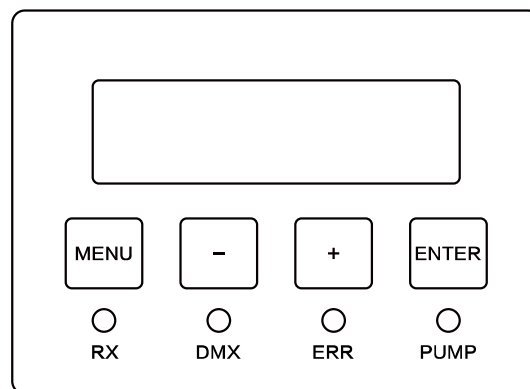


- |  |                                   |                      |
|--|-----------------------------------|----------------------|
| 1. Castor                              | 2. Fuel Tank                      | 3. Handle            |
| 4. 3-pin XLR                           | 5. 5-pin XLR                      | 6. Power Input AC380 |
| 7. Pressure Gauge                      | 8. LCD screen and Operation Panel | 9. Emergency STOP    |
| 10. Power Switch (3P Breaker)          | 11. Cover                         |                      |
| 12. G 1¼ Quick Coupler for Fuel Outlet | 13. Fuel Drainage                 |                      |

### **WARNING:**

For better heat dissipate and ventilation, please open the cover of uPumper P20 when it is working.

## ▲ Operation Panel



### 1. LED Display Area

Indicator light	Explanation	ON	OFF	BLINK
RX	Reserved	N/A	N/A	N/A
DMX	DMX signal	N/A	No DMX signal	DMX connected
ERR	Alert or Error message	Alert or Error	No	N/A
PUMP	Pump Status	Pump ON	Pump OFF	N/A

## 2. Button Functions

**MENU:** Switch interface to setup parameter;

**+:** Parameter Up;

**-:** Parameter Down;

**ENTER:** Confirm and save parameters (screen will flash when parameters saved)

**Note:** screen display will switch to main interface if don't press button in 15s.

## 3. Welcome Interface

**P20H-230515**  
**XXXXXXXXXXXX**

**First Line:** Product model and software version

**Second Line:** Equipment series number

## 4. Main Interface

**DMX: 1 M: AUTO**  
**P: 500 L:50%**

**First Line**

**DMX:** DMX address 1 (value from 1-512)

**M:** AUTO means auto control; DMX-C means console control

**Second Line:**

**P:** Pressure Value 500 (100=50bar)

**L:** Liquid level 50%

## 5. Alert Message

Alert Message	Explanation
E0.1 Fuel Low	When the fuel level in fuel tank less than setting low fuel level for continuous 5s, machine will stop working and report E1. When refueling and fuel level exceed low fuel level, alert message eliminate automatically.
E0.2 P Relief ON	Relief solenoid valve ON. Close relief solenoid valve, error eliminate.
E0.3 KEY STOP	Press the Emergency STOP key. Reset the Emergency stop key, error eliminate.
E0.4 Factory Mode	Factory Mode Switch to Normal Mode, error eliminate.
E0.5 Pump Sleep	Pump sleep

## 6. Error Message

Error Message	Explanation
E2 PressureFail	When pressurize, if machine running time exceed Pump Pro Time while the pressure value still lower than Pump Pro Pre (Pump protection pressure), report E2 PressureFail. Please restart the machine.

## 7. Menu Setup

Press "MENU" to switch through setup menu.

Menu	Range	Default setting	Explanation
Pressure Relief	OFF/ON	OFF	ON: relief pressure (depressurize) OFF: stop relief pressure
Set DMX Address	1~512	1	DMX address setup

Control Mode	AUTO / DMX control	DMX control	AUTO: pump running automatically when turn on the machine. DMX control: control the running of pump through DMX console
Language	Chinese/English	English	Language switch
DefaultParamete	ON/OFF	OFF	Reset default parameter settings
Mode Select	Normal Mode/ Factory Mode	Normal mode	Please set normal mode for regular use of machine.

## 8. Advanced Menu

To ensure the safety advanced interface was valid only when Pressure Relief stays at ON status, and if pressure relief stops it also can't enter. Press and hold "MENU" for 3s enter advanced interface, press "MENU" to switch interface, press "MENU" 3s can back to main interface.

Menu	Contents	Explanation
Drive Test	Pump	Pump running 2s. if pump pressure exceed 95, pump not running.
	Relief Valve	Relief valve will be on and off 3 times
	Switch Valve	Switch valve will be on and off 3 times

## 9. Factory Menu

Press and hold "ENTER" for 3s enter advanced interface, press "MENU" to switch interface, press "ENTER" 3s can back to main interface.

Menu	Range	Default setting	Explanation
Set LowPressure	200-800	400	If current pressure < set LowPressure, switch valve ON
Set Pressure	LowPressure - 800	500	If current pressure > Set Pressure, switch valve off (close)
Fuel Low	0-50%	20	If fuel level < Fuel Low for continuous 5s, pump stop running, machine report E0.1 Fuel Low.
Pump Pro Time	0-10s	3s	When pressurize, if machine running time exceed Pump Pro Time while the pressure value still lower than Set Pressure, report E2 PressureFail.
Pump Pro Count	1-4	1	When pressure fail, pump will automatically running again if here set $\geq 2$ , if after running the setting count, the pressure value still lower than Set Pressure, report E2 PressureFail.
P Relief Count	0-300s	5s	Pressure relief count down time
Relief State	ON/OFF	ON	Set Relief valve status
Sleep Time	1-10min	2min	The time period when current pressure higher than low pressure exceed sleep time, pump stops running.

## 10. Control

### DMX Control

uPumper P20H just occupy a single channel.

Channel Value	Function
0~49	Depressurize, pump OFF
50~200	Pressurize, pump ON
201~255	Depressurize, pump OFF

## Auto Control


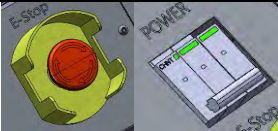
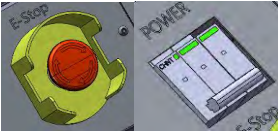

Press MENU enter setting interface, find Control Mode, select AUTO control. Machine start count down then Pump will start work after finish count down. Press E-STOP to stop the machine.

### ▲ Quick Operation Instructions


#### WARNING:

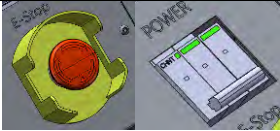
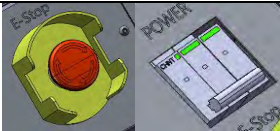

Install uPumper P20H in an open space with good ventilation and heat dissipation. The best ambient temperature is -10~+26 degrees (lower temperature is good for heat dissipation). please avoid sun exposure that causes temperature rise. It is strictly forbidden to use it in a closed environment.

#### a) DMX Control Mode (default)

Step	Content	Schematic diagram	Remark
1	Plug in		The device use 3-phase 5-wire system for power supply (1.5 square wire diameter). When any phase or zero line is missing, system will protect automatically and the device can't start up.
2	Connect XLR cable		After turn on machine, the DMX indication light will flash if received DMX signal.
3	Filling the fuel tank		ISOPAR
4	Reset the E-stop key, Power ON the device		Wait a delay of 15s for startup, device performs pipeline pressure relief automatically (default pressure relief time is 30s), wait until the device enter main interface on LCD screen.
5	Set DMX address	<div style="border: 1px solid black; padding: 5px; text-align: center;"><b>Set DMX Address</b> <b>1</b></div>	
6	Pressurize through DMX console	DMX value 50~200	After finish pressurize, flammers can firing normally. Pump station will output fuel according to the setting pressure.
7	Depressurize through DMX console	DMX value 0~49 or 201~255	After the show or long time not use flame effect, please execute depressurize.
8	Press E-Stop, then Power OFF		After the show, please first press E-Stop to relief the pressure, then power off the machine.
9	Emergency Stop		Under emergency situation please press E-stop. After press E-Stop: 1. Power supply of drive motor was disconnected 2. Relief valve was turned on 3. Pipeline pressure was eliminated 4. System stops working.

#### b) Auto Pressurization Mode

Step	Content	Schematic diagram	Remark
1	Plug in		The device use 3-phase 5-wire system for power supply (1.5 square wire diameter). When any phase or zero line is missing, system will protect automatically and the device can't start up.

2	Filling the fuel tank		ISOPAR
3	Reset the E-stop key, Power ON the device		Wait a delay of 15s for startup, device performs pipeline pressure relief automatically (default pressure relief time is 30s), wait until the device enter main interface on LCD screen.
4	Auto pressurize		Pump will working automatically to pressurize the pipeline system. After finish pressurize, flammers can firing normally. Pump station will output fuel according to the setting pressure.
5	Press E-Stop, then Power OFF		After the show, please first press E-Stop to relief the pressure, then power off the machine.
6	Emergency Stop		Under emergency situation please press E-stop. After press E-Stop: 1. Power supply of drive motor was disconnected 2. Relief valve was turned on 3. Pipeline pressure was eliminated 4. System stops working.

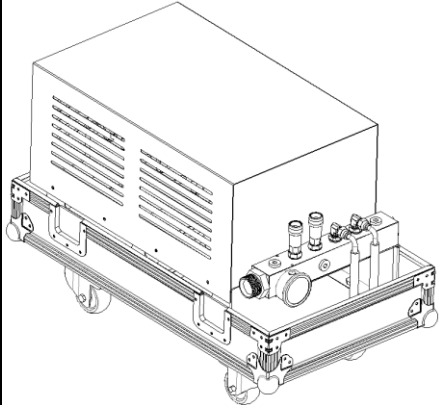
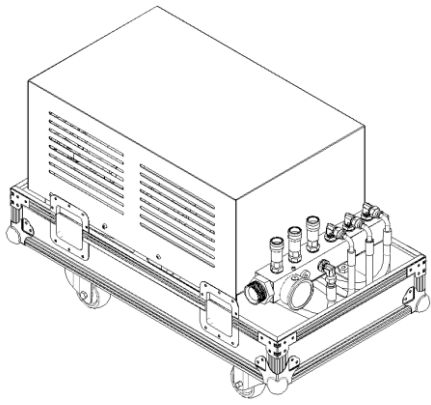
### ▲ Maintenance

1. To maintain the system in good performance and running status, it is recommended to running the entire flame system at least once every two weeks. (Start the pump station, firing the flame heads. Check whether the pressure shown on pressure gauge is normal)
2. Ensure there is enough fuel inside fuel tank before turn on machine.
3. Do use high quality ISOPAR, make sure there is no water in it, water can cause rust of pump station functional parts, resulting in pump station malfunction.
4. Ensure the cleanliness of fuel transfer container and pump station.

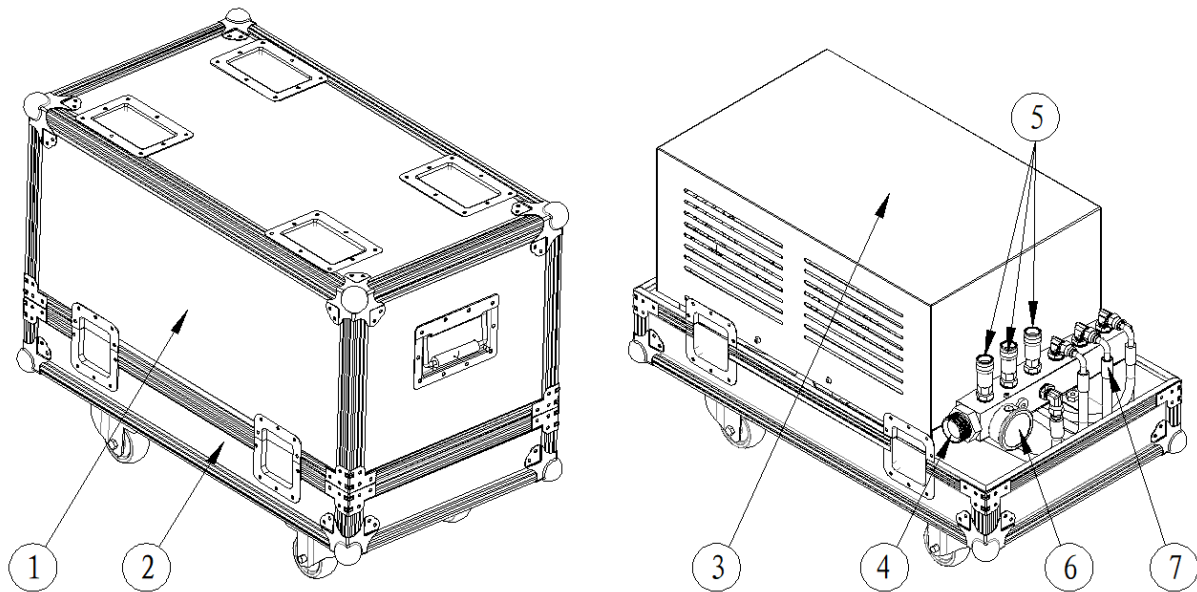


# Accumulator module

## ▲ Technical Specifications

Model	Accumulator Module 1 TO 2	Accumulator Module 1 TO 3
Part. No.	FPTAN010	FPTAN012
Structure		
Weight	56KG	64KG
Maximum Working Pressure	10MPA	10MPA
Apply To	For P20H with 2 units X20	For P20H with 3 units X20

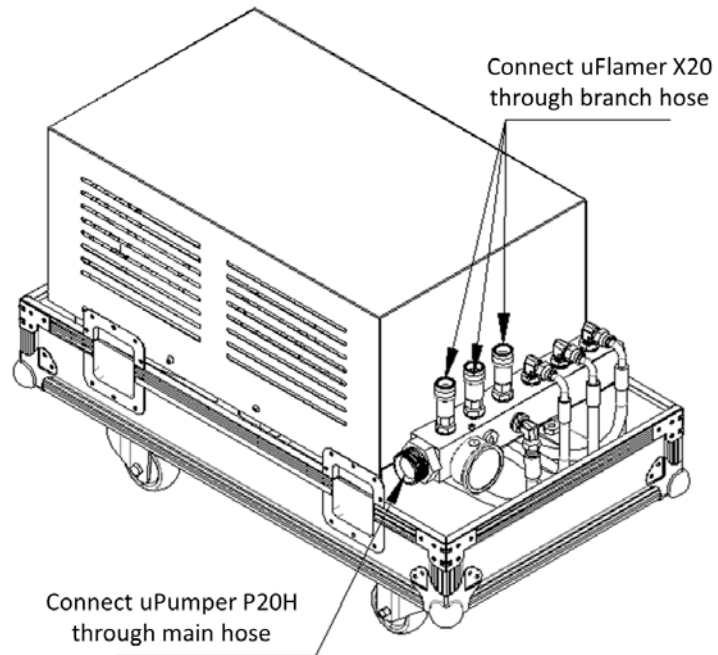
## ▲ Structure



1. Accumulator module flight case top plate
2. Accumulator module flight case bottom plate
3. Inner accumulator cover
4. Fuel input connector (Screw thread G1¼, connect with uPumper P20H)
5. Output quick coupler (ISO7241B G1/4 quick coupler female, connect with uFlamer X20)
6. Pressure gauge
7. Accumulator module inner pipe

## ▲ Operations

Open the flight case top plate and connect it to the pump station joint with the main hose 1¼ DN32. Each joint connection is designed with a spherical end face seal (a hydraulic mechanical seal method), which needs to be tightened with a wrench to ensure the fuel seal is reliable. Use a branch hose 3/8 DN10 to connect to the female head of the fuel output quick coupler, and the other end of the branch hose is connected to the uFlamer X20.



### **▲ Warranty Instructions**

- ∨ Sincere thanks for your choosing our products, you will receive quality service from us
- ∨ The product warranty period is one year. If there are any quality problems within 7 days after shipping out from our factory, we can exchange a brand new same model machine for you
- ∨ We will offer free of charge maintenance service for machines which with hardware malfunction (except for the instrument damage caused by human factors) in warranty period. Please don't repair machine without factory permission

#### **Below situations NOT included in warranty service:**

- ∨ Damage caused by improper transportation, usage, management, and maintenance, or damage caused by human factors;
- ∨ Disassemble, modify or repair products without permission;
- ∨ Damage caused by external reasons (lightning strike, power supply etc.)
- ∨ Damage caused by improper installation or use;

For product damage not included in warranty range, we can provide paid service.

Invoice is necessary when applying for maintenance service from SHOWVEN

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